


## EXPLORING STELLARIUM

### Solar Eclipse

You can search solar eclipses at <http://eclipse.gsfc.nasa.gov/solar.html>

Eg: 13<sup>th</sup> November 2012, 20:35 UT.


1. Set Date/time (F5) to 2012/11/13 20:00 UT (adapt to the local time of your computer)
2. In Europe, it is night, so change Location (F6) and find a place where you see the Sun. To see the total eclipse try Cairns, Australia
3. Select the Sun by clicking on the Sun. Center the Sun on the screen by pressing SPACE.
4. You should see the Moon to the left of the Sun.
5. Zoom in the Sun (mouse wheel or PGUP or /) so you see the Moon.
6. You can choose to take the atmosphere.
7. Make time go faster:. Two options
  - a. press  2 or 3 times.
  - b. Open Date/time (F5) window, put it on the corner. Keep pressing the minutes to increase.

### Lunar Eclipse

You can search lunar eclipses at <http://eclipse.gsfc.nasa.gov/lunar.html>

Similar procedure as before.

Eg: 15<sup>th</sup> April 2014, 06:00 UT. Visible in North and South America.

1. Set Date/time (F5) to 2014/04/15 06:00 UT (adapt to the local time of your computer)
2. Change Location (F6) and find a place in North America.
3. Select the Moon by clicking on it. Center the Moon on the screen by pressing SPACE.
4. Zoom in the Moon (mouse wheel or PGUP or /).
5. Make time go faster:. Two options
  - a. press  2 or 3 times.
  - b. Open Date/time (F5) window, put it on the corner. Keep pressing the minutes to increase.


Select a Location on South America and repeat the procedure. What differences can you see?

### Watch a Venus transit in a few seconds

You can search venus transits at <http://eclipse.gsfc.nasa.gov/transit/catalog/VenusCatalog.html>

Eg: 6<sup>th</sup> June 2012, 22:09 UT.


1. Set Date/time (F5) to 2012/06/05 22:00:00 UT (adapt to the local time of your computer)
2. In Europe, it is night, so change Location (F6) and find a place where you see the Sun from 22:00 UT until 5:00. Eg., RMI Capitol, Marshall Islands
3. Select the Sun by clicking on the Sun. Center the Sun on the screen by pressing SPACE.
4. You should see Venus to the left of the Sun.
5. Zoom in the Sun (mouse wheel or PGUP or /) so you see Venus.
6. When you zoom in enough, Venus will look dark enough to be visible when passing on front of the Sun.

7. You can choose to take the atmosphere.
8. Make time go faster (  3 or 4 times).


Try another place, eg. Tokyo, Japan or Honolulu (last minutes won't be visible). Now on the Southern hemisphere, eg. Canberra, Australia

If you were on the Sun, what would you see?


### **The Face of the Moon**

1. Set Location (F6) somewhere in the northern hemisphere.
2. Turn off atmosphere, ground, constellations.
3. Search (F3) for the moon. Center the moon on the screen (space). Zoom in.
4. Option a) Make time go faster (  5 times).
5. Option b) Open Date/time (F5) window, put it on the corner. Keep pressing the day to increase. (What are the differences between the 2 methods?)
6. Set Location (F6) somewhere in the Southern Hemisphere. Repeat procedure.

### **The phases of earth seen from the moon**

1. Set Location (F6) Moon. Change Landscape (F4) to Moon.
2. Turn off atmosphere, ground, constellations.
3. Search (F3) Earth. Center Earth (space) and zoom in
4. Make time go faster (  5 times).

### **The phases of Venus**

1. Set Location (F6) somewhere in the northern hemisphere.
2. Set Date/time (F5) 2014/10/19.
3. Turn off atmosphere, ground, constellations.
4. Search (F3) for Venus. Center Venus on the screen (space). Zoom in.
5. Write down the Phase, Illumination and Magnitude
6. Make time go faster (  ~ 6 times).


See how the phases change and try to find out the next new Venus and full Venus.

See how the apparent size of Venus changes; try to relate it to the difference in magnitudes – Venus is brighter in new phase than in full phase?!


(“new” Venus on 14/08/2015 and next full Venus on 2016/05/31)

### **See the planets move around the Sun from above the solar plane**

1. Turn off the atmosphere, the ground, the constellations.
2. Set observing place as “the solar system observer”: on Location (F6) chose from the Planet option “Solar System Observer”; or you can Search (F3) and then CTRL-G to “Go to” the selected place.
3. Search (F3) for the Sun. Center the Sun on the screen (space)
4. Turn on planets, planet markers and planet orbits.

5. Zoom in and out so you can see details of the inner planets or the outer planets.
6. You may change the Relative Scale on View (F4) to 0.25.
7. Make it move faster (click on  5 or 6 times).

### **North Star and precession**

1. Select any location on the Northern Hemisphere and set time at the beginning of the night.
2. Turn On Constellation Lines (C) and Constellation Labels (V).
3. Make time go faster (  3 times).  
See how the constellations move around a certain star.
4. Find Polaris.
5. Turn On the Equatorial Grid (E).
6. Set Date/time (F5) to the year 3000, then 4000, and so on.

### **The Zodiac**

1. Select any location and date/time.
2. Turn off atmosphere (A), ground (G), cardinal points (Q).
3. Turn On Constellation Lines (C) and Constellation Labels (V).
4. Find the Sun and center it on the screen (space).
5. Open Date/time (F5) window, put it on the corner. Keep pressing the day to increase.